Monthly Industry Survey

Comprehensive New Measures of Manufacturers' Inventories, Orders, and Shipments

THE Bureau of Foreign and Domestic Commerce has during recent years filled a number of gaps in the field of current business indexes. The monthly index of income payments, the indexes of retail trade, and the series on installment credit are among the new measures that have been made available. This year the Bureau has developed, through a monthly industry survey, data on manufacturers' dollar shipments, new and unfilled orders, and inventories. This service, made possible by the cooperation of companies in all branches of manufacturing industry, was inaugurated to meet the need for comprehensive indexes which would provide a clear indication of the over-all trend of new business of manufacturers, and to indicate the extent of shifts in the shipment flow and the volume of inventories held.

Indexes have been developed for three series—new orders, shipments, and inventories—and a classification by major industry groups has been provided in each instance. The sample of reporting firms now includes more than 1,200 companies which account for nearly 40 percent of total manufacturing. The series henceforth will be published in the statistical section of the Survey of Current Business.[1]

The series presented in this article will be supplemented in the near future in several important respects: (1) Data for additional industry groups will be shown separately as the samples are rounded out. (2) Seasonally adjusted series will be made available as soon as the time period covered by the data has been sufficiently extended. (3) An index of unfilled orders will be added, provided certain technical difficulties can be overcome. (4) Data covering the composition of inventory holdings—raw materials, goods in process, and finished goods—are being collected and will be made available when analysis is completed.

The movements of manufacturers' inventories, orders, and shipments during the months for which the Industry Survey data are available [2] will be discussed in the sections which follow along with a brief appraisal of the significance of each series. An outline of methodology appears in the final section of this article.

Index of the Value of Manufacturers' Inventories.

The largest segment of business inventories is found in manufacturing. It is estimated that manufacturers' inventories amounted to about $10,600,000,000 at the end of 1939, or approximately 58 percent of the combined total for manufacturing, wholesale trade, and retail trade at that date. The range of fluctuation and rapidity of change in manufacturers' stocks make it vitally important to have monthly information on this subject. For example, between the end of June 1939 and the end of February 1940 there was an estimated increase in inventories of about $1,400,000,000. Well over half of the increase was concentrated in the last quarter of 1939.

Inventory expansion or contraction sometimes plays a major role in initiating or intensifying swings in manufacturing production. The steep rise in the spring and early summer of 1933, and that in the fall of 1939, may be cited as examples of production booms in which inventory expansion played a prominent part. On the other hand, the decline beginning in the fall of 1937 and extending into the summer of 1938 was undoubtedly intensified by inventory liquidation, though it was set in motion by other more fundamental factors.

The manner in which inventory adjustment affects the rate of production of a single company is fairly obvious, i. e., if a concern fills orders out of stocks instead of current production it can lower its rate of production below the level of shipments. Conversely, output can be raised above the volume of current deliveries by producing for stock.

It is important, however, to consider also the interactions of large-scale inventory adjustment by individual manufacturing concerns from the standpoint of their effects on the rate of production of manufacturing industry as a whole. A company which is adding to its inventory must generally place orders for the required materials or semifinished goods with other manufacturers. The companies which receive such orders are usually not in a position to determine the origin or purpose of the increased demand. Consequently, they tend to increase their own purchases of materials to take care of the new business and frequently to maintain their customary inventory-sales ratios. In so doing, they tend to create an additional volume of orders for stock. For this reason a measure of the general trend of inventory holdings such as is provided by the Industry Survey is necessary to supplement the stock-sales ratio for individual companies as a guide to business management in the determination of broad business policies.

Of course, inventory adjustment does not in all cases result in instability in manufacturing activity. Small changes of insufficient magnitude to

[1] This article was prepared by Howard C. Grieves, Chief of the Statistical Research Section, Division of Business Review, and William C. Trapnell, in immediate charge of the Industry Survey. A bulletin containing the Industry Survey data is also issued each month and may be obtained upon request from the Bureau of Foreign and Domestic Commerce.

[2] It will be noted in the tables that follow that figures for July, August, and September 1939 are not yet available. These months will be reported, however, simultaneously with the corresponding months of this year.

generate a sustained business movement occur constantly. Some increase in inventories is usually a requirement of the manufacturing process whenever the volume of output is expanded—regardless of the factors which happen to be responsible for the production rise. Similarly, stock accumulation may actually permit production to be more evenly maintained throughout the year in industries characterized by wide seasonal variations in demand.

It is apparent from the data in table 3 that inventory movements in 1939 were a major factor in the trend of manufacturing production. From January to June 1939 there was a gradual decrease in inventory holdings, averaging about 0.7 percent a month. The inventory decline was accentuated during the second quarter by a sharp contraction in the automotive industry attributable largely to stock reduction as the end of the model year approached. Nevertheless, the tendency toward liquidation of stocks was very general during the first half of the year, extending to practically all major industry groups. It will be recalled that there was a let-up in production during the spring of 1939, and that there is little else to account for it other than the inventory movement.

An exact measure of the changes in inventory holdings which took place from June to September is not now available from the survey data. However, the inventory index for the end of October reveals that after June a very considerable increase had taken place; from the midyear mark of 95.5 the index had risen to 101.3 (December 31, 1938=100). The outbreak of the European war early in September and the sharp upturn in manufacturing production which began at the same time suggest that much of the increase may have occurred during September and October—based on anticipation of export business, price increases, or possible shortages. During the months of November and December inventory holdings were expanded even more rapidly than in the immediately preceding months as deliveries against orders previously placed were made in increasing volume, and the index rose from 101.3 as of October 31 to 107.3 at the year end—or almost 6 percent. In dollar terms, manufacturers' stocks increased about $600,000,000 in the 2 months of November and December, and the rise from the midyear amounted to about $1,200,000,000.

The stimulus of inventory expansion on such a scale was the major factor in the rise of manufacturing production to an all-time record high in December. Practically all industry groups participated in the inventory expansion. The increase in the durable-goods industries during the second half of 1939 amounted to 16.6 percent, or more than double the rise of 7.8 percent recorded for the nondurable goods groups. The durable-goods industries similarly enjoyed a much greater rise in production than the nondurable goods lines during this period.

With a large proportion of the increased output remaining in the hands of manufacturers, the high level of production could not be sustained, and after December production schedules were rapidly curtailed. As production was brought down to a volume more nearly corresponding to consumption requirements; the rate of inventory accumulation was diminished and by March it had terminated. In the meanwhile, production had fallen from 128 in December on the Federal Reserve index to 112 in March, only about 5 percent above the pre-war level of August 1939.

An appreciable stock reduction appeared in April when the inventory index declined to 108.9 from 109.8 in March, a decrease of almost $100,000,000. However, this movement did not gain momentum in either May or June as the intensification of the war in Europe and the National Defense program considerably altered the economic outlook. The June index was 108.2, only 0.7 point below the April figure. The absence of inventory accumulation in May and June, when production rose abruptly from 110 to 121 on the Federal Reserve index, presents a significant contrast to the latter half of 1939, since it indicates that the recent rise is more firmly based than was the boom of the closing months of 1939 when inventory expansion was a dominant factor in the advance.

In evaluating movements in the inventory index two points should be kept in mind. First, the inventory index has a rather narrow range of variation from month to month, because stocks on hand at any one time are much larger than a month's output. Hence, a sizable change in a production or shipment index resulting entirely from an inventory movement will be reflected by a rather small change in the inventory index. However, the significance of small changes in the latter index may be better appreciated if translated into their dollar equivalents. As the estimated inventory holdings of manufacturers at the base period of the index (December 31, 1938) amount to $9,915,000,000, a change of 1 point in the index is equivalent to about $100,000,000.

Second, since the index series provided by the Industry Survey measure dollar value rather than quantity aggregates, price as well as quantity fluctuations influence the movement of the indexes. However, inventory value reacts more quickly to changes in quantity than to changes in the price level. The sluggish reaction of inventories to price changes results from the fact that stocks on hand at the end of any month were not all acquired at the prices prevailing at that time nor are stocks often revalued at current prices each month. The rate of stock turn-over is an important factor in determining the rapidity with which changes in the price of materials will affect inventory value. The problem is further complicated by the diversity of accounting methods in common use with respect to the valuation of inventories. For these and other reasons

no attempt has been made to adjust the survey index for price changes.

Index of New Orders Received by Manufacturers.

The measurement of changes in demand is more difficult for manufacturing than it is for either wholesale or retail trade. Since the nature of wholesale and retail trade usually requires that stocks of goods be maintained so that orders may be filled promptly upon receipt, sales statistics provide satisfactory measures of demand. Consequently, in these fields, sales are substantially equivalent to incoming business or new orders.

However, sales data (i. e., shipments or billings) provide a satisfactory measure of incoming business for only a portion of manufacturing industry—principally for companies which manufacture standardized products that are (1) conventionally stocked by the manufacturer for prompt delivery upon receipt of orders, e. g., hardware, gasoline, rubber tires; or (2) have a very short period of production, e. g., perishable food products, some chemicals, etc.

However, in a large part of manufacturing industry, particularly the durable producers' goods lines, orders are not usually filled promptly upon receipt. Business firms in which this condition prevails usually maintain a record of the value of new orders independently of shipments.

In order to obtain the most comprehensive measure of the flow of new business the Industry Survey index of new orders received by manufacturers, therefore, includes the shipment figures of companies which specifically state that they fill orders promptly upon receipt and the new order figures reported by companies which do not fill orders as received. All companies cooperating in the Industry Survey were requested to report the dollar value of new orders and shipments on a net basis, i. e., total new orders less cancelations and shipments less discounts, returns, allowances, etc.

Only three major industries are not directly represented in the new orders index, automobiles, shipbuilding, and aircraft. In the first case, most companies do not maintain new order files. Since shipments are not ordinarily made against orders currently received, they do not provide a satisfactory measure of incoming business. Hence, there is no measure available for inclusion in the index which would be comparable with the data used for other industries. The aircraft and shipbuilding industries have been excluded for the present because the unusually erratic fluctuations in orders placed during the past year would distort a monthly measure of the flow of business.

The new order index, based on Industry Survey data, is presented in table 4. The data indicate that between January and April 1939 there was a moderate decline in nondurable goods industries, whereas orders in the durable goods industries held steady during this period. The downward trend in the nondurable goods lines was reversed in May and June. At the same time new business in the durable goods industries also increased, so that by June the index for manufacturing as a whole had risen to 108.2 from 99 in April. This rise was followed by an appreciable expansion in production during the summer months preceding the outbreak of the European war.

Although data for the June-September period are not yet available, the spurt in business activity dating from the declaration of war had carried the new order index to 148 by October. The durable goods index stood at 208 in that month or nearly twice the June volume. In contrast, the index for nondurable goods showed only a moderate gain at 113 in October compared to 109 in June.

It cannot be concluded from this that the nondurable goods industries did not also experience a large buying wave at the outbreak of war. The data on shipments for nondurable industries in October show a relatively much greater increase from June than orders. Hence, it appears that there was a buying spurt in nondurable goods concentrated in September and that the expanded shipment volume in October reflected deliveries against September orders.

From the October high the new order index fell abruptly to 119 in November. Durable goods orders dropped from 203 to 141 and nondurable from 113 to 105. In December, another sharp decline in new orders in the durable goods lines dropped the index to 114. Nondurable industry groups were back to or below the pre-war level in November and were practically unchanged in December.

Incoming business receded less rapidly in January and February, while production was brought more closely into line with shipments and new orders. In March and April a moderate increase in new business was recorded in both the durable and nondurable lines. By May, durable goods industries were experiencing a very large increase in new business, and in June the gains were not only extended in durable goods but were shared almost equally in the nondurable lines. The June index of new orders for the manufacturing industry was 133, higher than any month since last October.

Index of the Value of Manufacturers' Shipments.

The Industry Survey index of manufacturers' shipments provides a measure of changes in the flow of goods out of manufacturing establishments either to other manufacturers or into distributive channels and export trade.

It should be noted the index does not directly measure changes in the net flow of goods from manufacturing industry as a whole, since shipments from one manufacturer to another are necessarily included in the total. The net movement can be approximated only by considering the shipment figures in relation to changes in the inventory index. For example, a larger amount of goods is moving out of manufacturing in-

dustry as a whole if shipments rise over the preceding month without an increase in inventory holdings. However, if shipments and inventories both rise then the net increase in shipments out of manufacturing industry as a whole will be less than the increase shown by the shipment index alone. In fact, it is theoretically possible for a rise in the aggregate shipments of individual manufacturing concerns to take place simultaneously with a decline in the net movement of goods out of manufacturing into distributive channels. Such a situation may be brought about by a large concurrent increase in the aggregate inventories held by manufacturing concerns.[3]

Table 5 reveals the extent of the rise in shipments which followed the outbreak of the European war. The index for all manufacturers rose from 106 in June to 132 in October, an increase of about 25 percent. Better than average gains were recorded by the durable goods lines which advanced from 109 in June to 142 in October. Nondurable goods rose from 104 to 125 during the same period.

Shipments of durable goods were maintained at about the high October level until the end of the year, whereas nondurable goods began to fall rather sharply after October. In January durable goods shipments also declined abruptly. Thereafter a horizontal movement occurred until May and June when an appreciable rise was recorded. In the latter month the shipment index for all manufacturing stood at 126, only slightly below that of December 1939.

Significance of Unfilled Orders.

The preparation of a properly weighted aggregate index of unfilled orders has not yet been completed. Chief among the difficulties encountered are the heterogeneous composition of order backlogs; the wide variation from industry to industry in the extent to which order accumulation occurs; and the fact that a much smaller number of companies are able to report unfilled order data than is the case for the other series. However, the percent changes in the unweighted aggregates of the data reported by durable goods manufacturers are published each month in the Industry Survey reports and comments on the figures will appear from time to time in the Business Summary Section of the Survey of Current Business.

The movements, as indicated by the unweighted percent change from the preceding month are presented in table 1. June 1940 is also compared with June 1939. It should be observed that the total volume of unfilled orders of reporting concerns at the end of any month is generally much larger than shipments or new orders recorded by them for that month. Consequently, relatively small percentage changes in unfilled order backlogs may be significant.

Table 1.—Percent Change in Value of Unfilled Orders Reported by Manufacturers of Durable Goods

Industry	Percent change from preceding month								Percent change June 1940 from June 1939
	1940						1939		
	June	May	Apr.	Mar.	Feb.	Jan.	Dec.	Nov.	
All durable goods reported[1]	+8.9	+2.8	−2.4	−3.6	−4.0	−5.4	−3.8	−0.9	+59.8
Iron and steel and their products	+9.7	+7.7	−2.8	−1.8	−15.7	−11.3	−10.6	−4.0	+94.7
Electrical machinery	+7.9	+1.1	0	−.6	+2.2	+5.7	−2.5	+7.3	+51.7
Other machinery	+4.8	+1.4	+.4	+1.3	+.9	+3.1	+.1	+3.4	+81.0
Other durable goods[1]	+12.0	−.2	−7.2	−11.7	+2.4	−2.3	+2.3	−4.5	+46.3

[1] Excludes data for the aircraft and shipbuilding industries.

The direction of change in unfilled orders shows the relationship between the volume of new orders and shipments during the month. That is, when an increase in unfilled orders occurs, new business received during the month has exceeded shipments. Conversely, when unfilled orders decline, incoming business has fallen below the level of shipments. In the latter event, manufacturers are drawing upon previously accumulated orders to achieve the current rate of shipments. Unless an expansion in new orders can be anticipated, the volume of shipments must eventually be reduced as backlogs are used up.

The magnitude of unfilled orders on the books also provides some indication of the extent to which the rate of production in the immediate future may be supported by previously accumulated orders. However, the significance of any unfilled order figure in relation to the rate of production depends not only upon its size but also upon its composition. An unfilled order for a ship, the construction of which may require up to 4 years, is quite different in its immediate effect on the national economy than an unfilled order of equal value for products such as steel which may be produced in a relatively short period. Similarly, outstanding orders are sometimes subject to cancelation, or deliveries may be deferred at the request of the buyer.

Table 1 shows that incoming business after the war spurt had fallen below the volume of shipments as early as November 1939. Thereafter, until May 1940, shipments were maintained above the rate of incoming business by drawing upon previously accumulated orders. In May and June unfilled order backlogs were augmented appreciably, the increase of 9 percent recorded for June being very substantial for

[3] Similar generalizations may be applied to the flow of new orders. This is a further evidence of the importance of having available a current measure of changes in inventories.

It should also be noted that the Industry Survey inventory index measures changes in inventories on a net basis. In other words, stocks held by manufacturing concerns at the end of the month are compared with their holdings at the end of the previous month. There is no "duplication" of inventories in the figures reported, because if a commodity moved from one company to another during the month it would be deducted from inventory by the selling company and added to inventory of the purchaser with appropriate changes in value incident to the transfer. In contrast, the shipment and new order data reported usually cover all transactions taking place during the month. Thus, as a manufactured article moves through successive stages of fabrication it is added to the shipment or new order total by each company which handles it.

this series. It is particularly interesting to observe that during each month from November 1939 to June 1940 the machinery industry (excluding electrical machinery) received new orders in excess of shipments. In contrast, the iron and steel industry drew heavily upon its order backlogs from November 1939 until May 1940 in order to attain the shipment volume recorded.

The Reporting Sample.

As indicated previously, the manufacturing companies regularly participating in the Industry Survey currently number more than 1,200 and account directly for nearly 40 percent of all manufacturing activity in the United States.[4] In developing this sample the Bureau has attempted to limit the number of cooperating manufacturers to the minimum necessary to provide a satisfactory measure of current trends in each major industry group. This was done in order to minimize the reporting burden on the companies, and to facilitate prompt compilations of the data each month.

In accordance with this policy the cooperation of trade associations was sought wherever possible. Several associations are currently furnishing consolidated reports for their members in lieu of direct reporting by individual companies.

In order to obtain an adequate sample it was necessary to canvass companies accounting for the bulk of the output in those industries where production is concentrated among a comparatively small number of companies. Although the number of concerns requested to cooperate in such cases was relatively small, the proportion of the total production in the industry covered directly in the sample was quite large On the other hand, in those industries where production is dispersed over a larger number of units a satisfactory sample could be secured by covering a lesser proportion of total production. Of course, in the latter case it was necessary to canvass a greater number of concerns even though a smaller proportion of the industry was directly represented in the sample.

The number of companies in each major industry group[5] which submitted reports for the month of June is shown in table 2, which also indicates the dollar aggregates reported for that month. Data are shown separately for each of the four items covered by the survey. It should be noted that the cooperating concerns were requested to cover the entire corporate ownership's domestic plant activities and stocks in a single report rather than to prepare separate reports for individual establishments. Thus, many more manufacturing establishments are covered in the survey than is indicated by the number of reports shown in table 2.

It will be observed that not all concerns cooperating in the survey are able to provide data for each of the four items requested. Hence, the dollar aggregates reported cannot be directly related from this table. In general, the shipment item is the most readily available figure, although 80 percent of the total number of cooperating companies provide inventory data. Although not shown separately, about two-thirds of the companies which report total inventories subdivide this item to some extent on their reports. The relatively small number of companies reporting unfilled orders is attributable primarily to the fact that many companies fill orders promptly upon receipt so that unfilled orders do not accumulate in sufficient volume to warrant maintenance of such records.

[4] In June, almost 200 companies were added to the original sample of reporting companies. The new reporters were largely concentrated among the industry groups for which the least satisfactory samples were available.

[5] The industrial classification used in the Industry Survey is that developed by the Central Statistical Board and published under the title, "Standard Industrial Classification, volume I, Manufacturing Industry."

Table 2.—Industry Survey Reporting Sample, June 1940

[Values in thousands of dollars]

Industry	Shipments		New orders [1]		Unfilled orders		Inventories	
	Number of reports	Reported value	Number of reports	Reported value	Number of reports	Reported value	Number of reports	Reported value
Total, all industries	1,213	1,700,880	913	1,803,599	541	2,307,730	971	4,316,143
Nondurable goods	525	709,105	390	724,871	142	174,864	456	2,101,296
Food and kindred products	67	324,872	61	217,048	7	23,007	61	406,132
Tobacco	10	35,520	10	35,520			8	207,344
Textiles	162	90,127	83	60,575	60	104,360	128	243,200
Apparel and other finished products	18	5,102	14	6,146	6	4,637	16	24,064
Paper and allied products	97	61,204	77	30,407	41	13,685	92	80,003
Chemicals and allied products	91	104,777	72	50,046	12	12,161	79	200,715
Petroleum refining	29	210,496	20	216,496			25	581,200
Rubber	29	73,723	20	73,728			29	108,806
Leather	22	18,980	16	30,004	13	16,165	18	84,278
Durable goods	651	882,696	405	621,606	390	2,124,788	481	2,153,271
Lumber and timber basic products	17	5,814	10	3,464	8	5,410	15	16,546
Furniture and finished lumber products	159	21,100	161	26,144	145	11,104	25	38,640
Stone, clay, and glass products	53	35,794	43	26,817	23	10,334	50	70,828
Iron and steel products	111	212,007	70	101,406	48	391,691	103	701,028
Transportation equipment (except automobiles)	31	58,003	23	110,283	24	1,253,716	31	175,784
Nonferrous metals and their products	34	64,087	23	61,467	16	73,637	31	180,862
Electrical machinery	69	111,028	58	124,614	43	253,138	62	201,353
Machinery (except electrical)	131	85,082	97	78,163	72	192,597	121	290,751
Automobiles and equipment	46	288,322	14	9,940	11	18,082	43	300,097
Miscellaneous	37	88,009	27	17,223	9	7,094	34	55,040

[1] Includes shipment data for companies which reported that their shipments were usually equivalent to new orders.

Construction of the Index Series.

The indexes for total manufacturing, total durable and nondurable goods industries shown in tables 3–5 are weighted aggregates of the indexes computed for the major industry groups. A brief description of the industry group indexes will therefore precede discussion of the method used in constructing the more comprehensive indexes.

The schedule submitted by each cooperating company contains data for the current month, preceding month, and corresponding month of the previous year. The reported dollar figures for each company in an industry group were totaled, and the percentage change between the current month and the 2 previous months was computed. The percentage changes for each industry group were then chained together, with January 1939 as the base month for the shipment and new order indexes, and December 31, 1938, for the inventory index. These base months are not entirely satisfactory and will be shifted as the period of coverage is extended.

In view of the large proportion of manufacturing industry directly covered in the sample, it was concluded that a more accurate and stable series would be obtained for each industry group by directly aggregating the figures reported by each company in the group rather than to segregate and weight the companies by size groups. In other words, since the sampling error for the smaller size groups is relatively large, it was considered undesirable to weight the figures reported by such companies to approximate their proper representation in the total, as by so doing the influence of any sample error would be correspondingly increased. In fact, the sample of companies having total assets of less than $500,000 was limited because of the large number of reports it would be necessary to handle if this group were to be adequately covered. In this connection it should be noted that while 89 percent of all manufacturing corporations in the United States have total assets of less than $500,000, these companies hold only 12½ percent of all manufacturing inventories and account for only 19 percent of all sales.[6]

To combine the index series for the major industry groups into an aggregate for manufacturing as a whole and for total durable and nondurable goods, the industry indexes could not be averaged arithmetically because each industry has a different relative importance in total manufacturing industry. Likewise, the sample coverage varies from industry to industry so that the reported figures could not be directly added for this purpose.

The Census of Manufactures data on the value of product for each industry group in 1937 was selected as the point of departure for combining the industry series on shipments and new orders into the indexes for total manufacturing and total durable and nondurable goods. However, as the Census data cover an entire year, it was necessary to adjust industry group weights based on the Census annual totals to approximate the relative importance of the various industries in the base month of the index series—January 1939. Weights based on annual data were directly applicable only in cases where January was a typical month in the year, i. e., where the monthly average for the year was roughly equal to the January figure. The data available for each month covered by the survey were carefully examined, along with collateral information, to determine whether January could be so regarded. If judged to be above the average for the year, the Census weight was correspondingly increased; if below, it was proportionately reduced.[7]

As a final step, all the index series on new orders and shipments presented in tables 3–4 were placed on a daily average basis excluding Sundays and principal holidays. Six holidays are allowed for, namely, New Year's, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. This adjustment is applied uniformly to all industry groups.

Many of the weighting problems involved in the construction of the shipment and new order series are absent in the case of the inventory index, since estimates of the proportion of total manufacturing inventories held by each industry as of December 31, 1938, were available from data prepared by Dun & Bradstreet.[8] The base period for the Industry Survey inventory index was also placed at December 31, 1938. Hence, the proportion of total manufacturing inventories held by each industry as of December 31, 1938, was directly applicable for the purpose of weighting the industry group indexes to arrive at an index for total manufacturing.

[6] "Statistics of Income for 1937, part 2," Bureau of Internal Revenue, pp. 93–94.

[7] The weights for a few industry groups where the reporting sample was considered least accurate were arbitrarily reduced. The most extreme reduction in weight for this reason occurred in the wearing apparel industry which is subject to extreme seasonal variation in addition to being poorly represented in the sample.

[8] See Dun's Review, May 1938. The Dun & Bradstreet estimates essentially represent a projection of 1937 Census figures to the end of the following year on the basis of a sample survey conducted by the former organization. These estimates were somewhat modified in certain instances to allow for foreign holdings and other items which rendered the figures not sufficiently comparable with Census and Industry Survey data.

Table 3.—Index of the Value of Manufacturers' Inventories [1]

[Dec. 31, 1938=100]

Industry	1940 June	May	Apr.	Mar.	Feb.	Jan.	1939 Dec.	Nov.	Oct.	June	May	Apr.	Mar.	Feb.	Jan.
Total, all industries	108.3	108.0	108.9	109.6	110.0	109.3	107.9	104.6	101.9	95.5	96.5	97.5	99.0	99.8	99.9
Total, durable goods	111.1	111.2	111.4	112.6	112.7	112.1	110.8	107.3	103.3	94.6	96.4	97.9	99.6	100.4	99.6
Total, nondurable goods	105.2	105.8	106.2	106.8	107.9	106.2	104.1	101.8	99.1	96.6	96.0	97.1	98.3	99.2	100.2
DURABLE GOODS															
Iron and steel and their products	110.3	113.6	110.9	111.1	111.8	112.0	111.0	111.0	106.8	96.9	96.8	96.2	99.3	100.5	99.5
Transportation equipment (except automobiles)	174.4	164.9	160.4	165.5	157.0	153.1	145.1	131.6	114.5	105.2	102.0	92.5	90.5	98.9	91.9
Electrical machinery	115.6	116.6	114.9	114.6	111.7	106.3	108.9	98.4	90.2	94.8	95.0	97.2	97.8	97.1	97.3
Other machinery	110.0	110.6	110.9	112.4	111.0	109.5	106.1	102.2	99.3	98.5	99.0	99.4	101.0	99.8	99.8
Automobiles and equipment	90.5	98.9	108.5	112.1	115.0	118.4	127.3	118.9	113.0	71.3	84.7	92.7	99.4	101.6	100.5
Other durable goods	106.7	107.0	107.8	108.7	107.8	106.1	100.2	102.9	99.4	97.8	98.8	100.0	100.0	101.1	101.1
NONDURABLE GOODS															
Food and kindred products	97.1	97.6	98.4	100.5	102.5	103.9	100.0	104.9	101.7	90.9	90.0	90.0	92.7	92.1	97.6
Paper and allied products	104.0	104.9	106.6	109.9	107.1	105.7	102.3	99.1	94.5	91.6	94.0	96.6	97.0	99.9	101.4
Chemicals and allied products	111.3	111.1	111.5	111.1	109.8	108.0	102.8	96.6	93.5	98.4	97.8	97.9	98.4	99.8	103.1
Petroleum refining	98.3	97.1	96.5	94.5	93.8	91.6	92.6	93.7	92.3	96.4	97.0	97.1	98.1	99.1	100.0
Rubber products	116.7	122.2	120.7	110.0	116.1	113.8	111.9	103.3	97.3	101.3	104.4	104.3	103.2	102.5	(2)
Other nondurable goods	110.3	110.5	111.2	111.8	111.9	111.7	108.6	104.9	102.6	101.3	100.3	101.5	102.0	102.9	101.9

[1] Figures relate to the end of each month shown.
[2] Not available.

NOTE.—Data for the months of July, August, and September 1939 were not available at the time this table was prepared; preliminary figures for July 1939 and 1940 are shown on p. 21.

Table 4.—Index of Value of New Orders Received by Manufacturers

[January 1939=100]

Industry	1940 June	May	Apr.	Mar.	Feb.	Jan.	1939 Dec.	Nov.	Oct.	June	May	Apr.	Mar.	Feb.
Total, all industries	132.9	121.9	110.2	105.5	100.5	104.4	119.0	139.1	148.4	108.2	102.5	98.0	99.7	98.2
Total, durable goods	166.9	141.0	118.2	112.3	103.3	100.2	114.0	140.7	203.3	107.4	105.0	101.7	101.7	99.9
Total, nondurable goods	117.0	105.9	106.0	101.9	98.7	103.2	109.7	105.9	113.2	108.7	101.0	96.6	96.4	98.8
DURABLE GOODS														
Iron and steel and their products	191.2	144.6	104.1	101.1	81.1	89.5	115.2	152.2	222.0	100.3	89.4	91.4	92.8	92.8
Electrical machinery	158.0	140.9	130.5	128.7	128.3	122.9	114.0	138.6	148.8	110.4	108.8	110.1	104.0	110.1
Other machinery	165.7	141.4	132.9	125.3	118.8	118.4	117.3	125.4	140.7	114.3	113.3	110.8	112.4	98.5
Other durable goods	142.6	134.9	122.4	113.0	114.9	116.0	109.1	135.8	241.7	112.1	105.3	107.2	104.4	103.2

NOTE.—This index is constructed on a daily average basis excluding Sundays and principal holidays. Data for the months of July, August, and September 1939 were not available at the time this table was prepared; preliminary figures for July 1939 and 1940 are shown on p. 20.

Table 5.—Index of the Value of Manufacturers' Shipments

[January 1939=100]

Industry	1940 June	May	Apr.	Mar.	Feb.	Jan.	1939 Dec.	Nov.	Oct.	June	May	Apr.	Mar.	Feb.
Total, all industries	126.9	122.9	119.7	121.2	118.9	118.3	138.1	132.6	132.3	100.4	103.7	104.5	107.1	101.0
Total, durable goods	139.6	130.3	132.9	131.1	128.7	129.3	140.5	148.1	141.0	103.9	106.6	107.5	107.7	101.1
Total, nondurable goods	113.8	110.8	107.0	112.4	110.4	108.9	117.1	119.4	124.0	102.6	101.6	101.7	106.4	102.7
DURABLE GOODS														
Iron and steel and their products	152.0	132.7	130.8	126.6	129.3	137.1	105.3	105.5	101.3	109.6	105.7	100.2	102.6	98.6
Transportation equipment (except automobiles)	190.0	197.1	205.2	237.6	197.9	164.8	190.7	179.0	178.1	119.6	93.8	115.5	100.0	101.9
Electrical machinery	163.0	147.3	142.1	132.6	129.0	118.2	128.7	133.2	128.5	118.3	109.8	100.8	102.4	101.2
Other machinery	160.9	164.8	150.7	142.1	131.9	122.9	143.3	141.4	144.8	122.0	124.6	124.6	121.1	110.1
Automobiles and equipment	107.4	117.7	127.4	124.0	122.1	124.7	135.5	132.7	108.6	91.1	90.0	101.4	102.2	94.6
Other durable goods	137.2	137.0	120.1	129.4	133.3	120.1	138.8	110.0	160.2	113.0	103.9	110.3	111.5	104.0
NONDURABLE GOODS														
Food and kindred products	114.3	111.1	109.6	110.0	105.8	103.3	100.0	111.0	112.0	104.8	101.5	103.7	103.8	100.3
Paper and allied products	143.1	137.1	134.4	118.8	119.1	118.6	110.1	127.5	133.0	100.0	103.7	103.1	100.7	101.4
Chemicals and allied products	120.0	120.5	114.5	110.6	108.0	112.0	108.9	127.7	142.6	106.5	101.4	99.7	102.0	97.7
Petroleum refining	111.6	107.6	105.5	106.2	101.0	112.2	114.9	118.9	114.9	102.1	103.2	98.9	94.7	92.8
Rubber products	159.3	134.0	120.0	123.0	116.9	122.4	113.2	125.7	160.0	130.2	110.7	118.4	117.8	110.5
Other nondurable goods	98.4	97.3	100.8	114.0	118.7	100.0	119.1	120.5	130.2	98.8	94.4	98.0	116.0	111.6

NOTE.—Data for the months of July, August, and September 1939 were not available at the time this table was prepared; preliminary figures for July 1939 and 1940 are shown on p. 20.